



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D412-742-013
Job Sheet 168765-A



Part No: D412-742-013

Job Qty: 1 ea

Part Name: Skidtube Fits LH or RH High Gear, DART (Apical) Tri-Bag Float Compatible



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 11/22/17

Job Tracking No:

Due Date: 12/8/17

Created By: Marie Lajeunesse

Type: Stock

Description:

Customer: Aeroservicios Especializados SA de CV - ASES (CASES01)

Calle Rio San Lorenzo #699 Int 102, San Pedro Garza Garcia Fuentes Del Valle, Nuevo León, 66220 Mexico
ph:52-938-382-2113 fx:52-938-384-0535.

Note: IPP Rev: A 05.10.13 New Issue KJ/JLM IPP Rev:B 06-06-08 As per DSI9336 JLM IPP Rev:C 07-05-28 As per Rev C JLM IPP rev D 07.11.01 ecn 1053P EC IPP rev E 07.11.27 ecn 1072 EC verified:DD IPP Rev:F 08-09-08 ecn 08-510 DD verified:EC IPP Rev:G 09-01-23 as per DSI9441 DD verified:EC IPP Rev:H 11.11.01 as per DSI9517 REV.B DD verified:EC IPP rev:I 12.01.12 PER IIN REV.E DD VERF:JLM IPP REV:J 17.05.10 AS PER CHG010 DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
110	Start up Operation	1 Ea		12/8/17	0.00	0.00	Start Up Stores/Pkg-1		
115	Packaging	1 pcs		12/8/17	0.00	0.00	Packaging1		
120	QC	1 pcs		12/8/17	0.00	0.00	QC4		
125	DC	1 pcs		12/8/17	0.00	0.00	DC		
130	Packaging	1 pcs		12/8/17	0.00	0.00	Packaging3		
140	QC21-FG	1 Ea		12/8/17	0.00	0.00	QC21		

Part Op 125 - Photocopy bluefile and create labels per PPP D412-742-013 CHG0010
Descriptions: 130 - Identify and pack for shipping as per PPP D412-742-013

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
110-Start up Operation	AN3C37A	1	0	0	0
	AN3C40A	1	75	0	0
	AN3C41A	1	492	0	0
	AN3C42A	1	29	0	0
	AN3C43A	4	41	0	0
	AN3C46A	5	223	0	0
	AN4C47A	4	42	0	0
	AN4C52A	4	61	0	0
	AN4C53A	4	95	0	0
	AN4C6A	16	302	0	0
	AN4C7A	4	113	0	0
	AN6C12A	8	125	0	0
	D2571	1	17	0	0
	D2572	1	15	0	0
	D2573	1	22	0	0
	D2574	1	17	0	0
	D2747	4	142	0	0
	D2876	2	65	0	0
	D2877	2	54	0	0

5030513

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____	
Part No. _____	
NCR No. _____	
Date : _____	Step _____
Description Work Order _____	

Root Cause			
Environment	☐	No Re-verification	☐
Design	☐	Operator	☐
Doc/Data	☐	Offset/Setup	☐
Equip/Tooling	☐	Supplier	☐
Handling/Pre	☐	Training	☐
Material	☐	Use for Testing	☐
Internal Transport	☐	Poor Information	☐
Tribal Knowledge	☐	Rushing	☐
LOA	☐	Product Improvement	☐
Substation	☐	Process Improvement	☐
Past Expiry Date	☐	Manufacturing Process	☐
Misidentified	☐	Past Due	☐
		Pressure	☐
		Bending	☐
		Centre N	☐
		Cracks	☐
		Crimp/Kin	☐
		Cuffs	☐
		Crushing	☐
		Heat Treat	☐
		Wave/Twist in Tube	☐
		Marks/Chatter	☐
		Contamination	☐
		Countersink	☐
		Cut Too Short	☐
		Instructions Incomplete/Unclear	☐
		Drill Holes	☐
		Power Loss/Surge	☐
		Folio/Program	☐
		Grain	☐
		Weld	☐
		Wrong Stock Pulled	☐
		Out of Sequence	☐
		Off-set	☐
		Mislabeled	☐
		Fit/Function	☐
		Misaligned/off center	☐
		Positioned Wrong	☐
		Outside Dimensions	☐
		Over/Under tolerance	☐
		Part Incorrect	☐
		Part Lost/Missing	☐
		Part Moved	☐
		Drawing	☐
		Finish	☐
		Misread	☐
		Turning Sequence	☐
OTHER : _____			

WORK ORDER

Revision: _____

Operation: _____

Change No: _____

Original Serial #: _____

PART NO: _____

Skidtube Fits LH or RH High Gear, DART (Apical) Tri-Bag

Float Compatible

S031959

D412-742-013

Start up Operation 01/15/18

CHG010

Job No: 168765-A

Dart Aerospace Ltd.

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Hawkesbury, ON K6A 1K7

CANADA

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Email: sales@dartaero.com

www.dartaerospace.com

DART

AEROSPACE

DATE

Work Order update only ☐

AGAINST DEPARTMENT/PROCESS

Loss tube	☐	Water Jet	☐	Engineering	☐
Small Fab	☐	Prod. Eng. Coord.	☐	Quality	☐
Finishing	☐	Rec/Store/Packaging	☐	Other	☐
Welding	☐	Supplier	☐		

MRB (QSI042) Approval

Position

Completed By

Lead hand / Supervisor
Approval Verification

QC / QA Coordinator
Approval

Positioned Wrong

Outside Dimensions

Over/Under tolerance

Part Incorrect

Part Lost/Missing

Part Moved

Drawing

Finish

Misread

Turning Sequence

OTHER : _____

2x5024005	D3403-1	5005867x6	(8)	38	0	0
5023994x5	D3403-3	5007535x3	(8)	73	0	0
	D3403-5	5019420	(8)	33	0	0
	D3405-041	50165497	(1)	13	0	0
	D3405-043	5023980	(1)	14	0	0
	D3407-041	5023974	(1)	18	0	0
	D3417-3	5024010	(2)	40	0	0
	D3456-1	5024011	(1)	166	0	0
	D3533-1	5024016	(2)	39	0	0
	D3672-11	5024018	(8)	624	0	0
	D3672-3	5024022	(32)	724	0	0
	D3672-9	5024020	(8)	982	0	0
	D412-742-043	5030513	(1)	0	0	0
2x5023972	MS21043-3	5024024	(13)	709	0	0
	MS21043-4	5000677 K27	(29)	798	0	0
5025761	NAS1149C0332R	5024031	(26)	3,419	0	0
	NAS1149C0432R		(32)	1,078	0	0
	NAS1149C0632R	5024032	(8)	149	0	0

Part Specifications

Specifications could not be found.

Plex 11/22/17 1:35 PM Dart.lajeunesse.marie

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐								
		OTHER : _____							

(CONTINUED FROM PAGE 21)

Item	Qty -013	Qty -043	Part Number	Description
40	1		D2571	SADDLE, FWD OUTSIDE
41	1		D2572	SADDLE, FWD INSIDE
42	1		D2573	SADDLE, AFT OUTSIDE
43	1		D2574	SADDLE, AFT INSIDE
44	2		D2876	SADDLE SPACER
45	2		D2877	SADDLE SPACER
46A	8		D3403-1	BUSHING
46B	8		D3403-5	BUSHING
47A	4		D2747	SET SCREW
47B	2		D3533-1	SET SCREW
48	16		AN4C6A	BOLT
49A	4		AN4C52A	BOLT
49B	4		AN4C53A	BOLT
50	8		AN6C12A	BOLT
51A	32		D3672-3	WASHER (REPLACES NAS1515H4L)
51B	32		AN960C416L	WASHER
52A	8		D3672-9	WASHER (REPLACES NAS1515H6L)
52B	8		AN960C616L	WASHER
53	8		D3672-11	WASHER (REPLACES NAS1515H7L)
54	24		MS21043-4	NUT
55	4		AN4C7A	BOLT
56	2		D3591-1	BUSHING
60	8		D3403-3	BUSHING
61	1		D3405-041	GHW LUG
62	1		D3405-043	GHW LUG
63	4		AN4C47A	BOLT
64	4		MS21043-4	NUT
70	1		D3407-041	TOW RING
71	2		D3417-3	WASHER
72	1		MS21043-4	NUT
73	1		D3456-1	WASHER
91	1		AN3C37A	BOLT
92	1		AN3C40A	BOLT
93	1		AN3C41A	BOLT
94	1		AN3C42A	BOLT
95	4		AN3C43A	BOLT
97	5		AN3C46A	BOLT
99	26		AN960C10L	WASHER
100	13		MS21043-3	NUT

*DENOTES PART IS INCLUDED WITH D3391-043 ASSEMBLY ABOVE

**DENOTES THAT PART IS INCLUDED WITH ASSEMBLY ABOVE

5.2 D412-742-013 (DART TRI-BAG) Float Skidtube Installation Parts List

Item	Qty -013	Qty -043	Part Number	Description
	X		D412-742-013	FLOAT SKIDTUBE INSTALLATION
	1	X	D412-742-043	FLOAT SKIDTUBE
		1	D3391-043	412 FLOAT SKIDTUBE
1		*24	*AN3C4A	*BOLT
3		*10	*AN3C6A	*BOLT
4		*4	*AN3C7A	*BOLT
5		*38	*AN960C10L	*WASHER
21		*1	*D4095-041	*WEARSHOE (REPLACES D3564-1)
22		*1	*D4095-043	*WEARSHOE (REPLACES D3564-3)
23		*1	*D4095-045	*WEARSHOE (REPLACES D3564-5)
10		*1	*D3391-021	*412 FORWARD TUBE
11		**1	**D3401-041	**TOW CAP
12A		**10	**AELS-1032-225	**INSERT (REPLACES NAS1330S3KB166)
13		**10	**AN3C4A	**BOLT
14A		**4	**D3672-1	**WASHER (REPLACES NAS1515H3L)
14B		**10	**AN960C10L	**WASHER
24		**1	**D4095-051	**WEARSHOE (REPLACES D3564-13)
20		*1	*D3391-023	*412 MID TUBE
28		**20	**AELS-1032-130	**INSERT (REPLACES NAS1330S3KB116)
30		*1	*D3391-025	*412 AFT TUBE
25		**1	*D4095-049	**WEARPAD (REPLACES D3537-1)
26		**1	*D4095-047	**WEARPAD (REPLACES D3537-7)
31		**1	**D2646	**AFT CAP
32		**14	**AELS-1032-130	**INSERT
36		**8	**AELS-1032-225	**INSERT (REPLACES NAS1330S3KB366)
37A		**6	**AN3C4A	**BOLT
37B		**4	**AN3C5A	**BOLT
38A		**2	**D3672-1	**WASHER (REPLACES NAS1515H3L)
38B		**10	**AN960C10L	**WASHER

(CONTINUED ON PAGE 22)

Operation Number	Operation	Serial Number	Job	Quantity	Weight	Original Serial Number	Location	Container	Status	Added	Special Comments	Label	Supplier	Change No
Part Number: AN4C7A Revision: Bolt														
100	Receive Ea	S024066	168765-A	4 Ea	0	M138246	Start Up Stores/Pkg-1		Stock	12/18/2017	Issue Container			
Operation Totals:		1		4	0									
Part Totals:		1		4	0									
Part Number: D2747 Revision: Set Screw														
140	QC21-SA	S024051	168765-A	4 Ea	0	164408	ST010		Stock	12/18/2017	Issue Container			
Operation Totals:		1		4	0									
Part Totals:		1		4	0									
Part Number: D3407-041 Revision: Tow Ring														
160	QC21-SA	S023974	168765-A	1 Ea	0	S014019	Start Up Stores/Pkg-1	Bin	Stock	12/18/2017	Issue Container			
Operation Totals:		1		1	0									
Part Totals:		1		1	0									
Part Number: D3456-1 Revision: Washer														
140	QC21-SA	S024011	168765-A	1 Ea	0	S011330	ST036		Stock	12/18/2017	Issue Container			
Operation Totals:		1		1	0									
Part Totals:		1		1	0									
Part Number: D3672-3 Revision: Washer, Phenolic														
140	QC21-SA	S024022	168765-A	0 Ea	0	S023004	FG001		Stock	12/18/2017	Issue Container			
Operation Totals:		1		0	0									
Part Totals:		1		0	0									
Part Number: D412-742-013 Revision: Skidtube Fits LH or RH High Gear, DART (Apical) Tri-Bag Float Compatible														
140	QC21-FG	S031959	168765-A	1 Ea	0	S031959	FG074		Stock	1/15/2018	Issue Container			
Operation Totals:		1		1	0									
Part Totals:		1		1	0									
Part Number: MS21043-4 Revision: Nut														
100	Receive Ea	S000677	168765-A	27 Ea	-3	s000677	OVER007		Stock	10/16/2017	*			
		S023972	168765-A	2 Ea	2	s016503	OVER007		Stock	12/18/2017	Issue Container			
Operation Totals:		2		29	-1									
Part Totals:		2		29	-1									
Part Number: NAS1149C0332R Revision: Washer														
100	Receive Ea	S024031	168765-A	26 Ea	0	s019380	ST260A		Stock	12/18/2017	Issue Container			
Operation Totals:		1		26	0									
Part Totals:		1		26	0									
Part Number: NAS1149C0432R Revision: Washer														
100	Receive Ea	S025761	168765-A	32 Ea	0	PO038644	ST266		Stock	12/20/2017	Issue Container			
Operation Totals:		1		32	0									
Part Totals:		1		32	0									
Totals:		10		98	-1									

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐			